MSN
Research for Better Medicines

Solvent Recovery System

Date: 21st JUNE-2025

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Fresh solvent Purchased trend data from LifeScience-3 for FY 2025-26

S.No.	Month	Qty in KL	Value in Cr.	Average	
				Qty. (KL)	Value(in Cr.)
1	Avg. (24-25)	692	4.00	654	3.05
2	Apr-25	636	3.01		
3	May-25	672	3.09		
4	June-25				
5	July-25				
6	Aug-25				
7	Sep-25				
8	Oct-25				
9	Nov-25				
10	Dec-25				
11	Jan-26				
12	Feb-26				
13	Mar-26				
	Total	1308	6.10		

Improvement (baseline FY 2024-25)	
Avg. Qty.	Avg. Value
5.5%	23.75%

Overall Solvent Consumption, Process recovery & Spent sales details from Life Science-3 (FY 2025-26)

Month	Fresh		RFS		TOTAL	Process Output		Spent Sales	Remarks
	Qty.(KL)	%	Qty. (KL)	%	Qty. (KL)	Qty. (KL)	%	Qty. (MT)	
Avg. (24-25)	702.5	47	806.7	53	1509	1114	74	207.3	
Apr’25	567	43	742	57	1309	1098	98	263	
May'25	598	44	754	56	1352	1176	87	235	
Jun'25									
July'25									
Aug'25									
Sep'25									
Oct'25									
Nov'25									
Dec'25									
Jan'26									
Feb'26									
Mar'26									
Total	582.5	43.5	748	56.5	1330.5	1137	92.5	249	

Solvent Consumption, Process recovery & Spent sales details from LifeScience-3 (FY 2025-26)

Month	Fresh		RFS		TOTAL	Process Output		Spent Sales	Remarks
	Qty. (KL)	%	Qty. (KL)	%	Qty. (KL)	Qty. (KL)	%	Qty. (MT)	
Avg. (24-25)	552	40	806.7	60	1359	1114.3	74	207.3	
Apr'25	444	37	742	63	1186	1098	98	263	
May'25	414	35	754	65	1168	1176	87	235	
Jun'25									
July'25									
Aug'25									
Sep'25									
Oct'25									
Nov'25									
Dec'25									

Consumption in May'25	Qty in KL	%
Fresh Consumption	598	44
Process distillate Consumption(Reactor distilled)	254	19
RFS Consumption(Job work)	0	0
RFS Consumption(inside SRS)	500	37
Total	1352	100

Spent sales in May'25	Qty. in MT	Value in Lakhs
Distilled mixed solvent	185	18.5
Spent Mixed solvent	50	5.0
Total	235	23.5

oducts (Total Fresh Consumption: 174+414 =

C1 IPA, AMHA2 EA, COPB1 MDC, CTPS1
luene, CTPS1 Toluene & CGBH1 Toluene.

Running Improvements-Process Recovery increased & Further planning details

Product	Stage code	Solvent name	Usage / Batch			Recovery usage % (Up to May-25)	Recovery Usage % (June-25)	Remarks
			Fresh	Recovery	Total			
Leviteracetam	LVTM2	MDC	2500	5500	8000	--	68.75	we will increase recovery quantity in further trails up to 70% usage.
		Acetone	500	1000	1500	66	0	Usage started (Acetone 80% & MDC 20% Qty. 50 KL accumulated. We required LLE separation, already one trial taken in Batch Column but there is no separation.
Rosuvastatin	RSC2B	Methanol	2000	0	2000	--	0	Zero input fresh methanol to utility. Recovery only support to LS-3 Utility (15 KL Used)

Proposals for Improvements to be finalized after modifications

Product	Stage code	Solvent name	Input & Output Details per Batch		Existing (%)	Proposed (%)	Remarks
			Input	Output			
Clopidogrel	CGBH1	Ethyl Acetate	3300	2200	67	75	Layer Separation Ethyl Acetate send to ETP.
Atrovastatin	ATSC2	Acetonitrile	2516	1814	72	80	1. Centrifuge operation. 2. Nitrogen Blanket required. 3. Cooling system required (Brine).
Atrovastatin	ATSC2	Cyclohexane	4000	2700	68	75	1. Vacuum Distillation. 2. Vacuum controller required. 3. Dedicated vacuum pump.
Clopidogrel	CGBH1	IPA	2850	2200	60	70	Distillation temperature to be increased 85 to 95 °C.
Clopidogrel	CGBH1	MDC	1600	1010	63	70	1. Vacuum Distillation. 2. Vacuum controller required. 3. Dedicated vacuum pump.

Improvements-Process recovery increased deta

Product	Stage code	Solvent name	Usage / Batch			Recovery Usage %	Remarks
			Fresh	Recovery	Total		
Atorvastatin	ATSC1	Cyclohexane	2000	6000	8000	75	Nutsch filter /workup/Plant Distillation
		IPA	0	6600	6600	100	Water media /CF/Plant /Column distillation using with 10% MC
	ATSC2	Acetonitrile	1120	1690	2810	60	CF/Plant /Column distillation using with 10% MC
		IPA	143	0	143	0	CF/Plant /Column distillation using with 10% MC
	ATSC3	Toluene	400	2600	3000	87	workup /Plant distillation
Pregabalin	AMHA1	Toluene	400	4000	4400	91	Workup / Plant distillation
		Methanol	1800	1500	3300	45	Reaction consumption 600 lts / Plant / Column
	AMHA2	Toluene	0	7400	7400	100	Workup / Plant distillation
		Ammonia	2400	7400	9800	76	Work up/Plant distillation
		Ethylacetate	0	1800	1800	100	workup / CF/Plant distillation
	AMHA3	Toluene	100	700	800	88	workup /Plant distillation
		Methanol	3000	5400	8400	64	Water media/ANFD/Plant distillation
Clopidogril	COPB1	MDC	0	2700	2700	100	Workup/Plant distillation
		Methanol	4120	0	4120	0	Methanol+Acetone Mixed solvent
		Acetone	540	0	540	0	Experiments going on with single solvent
	CTPS1	Toluene	0	1400	1400	100	Workup/plant distillation
		Cyclohexane	0	2200	2200	100	ANFD / Plant distillation
	CGBS1	MDC	0	1600	1600	100	Workup/Plant distillation
		IPA	1200	1650	2850	58	Water media/CF/Plant disti / Column dist
		Toluene	0	7050	7050	100	Water media/CF-2 times /Plant disti / Column dist
		Ethylacetate	1400	2100	3500	60	workup / CF/Plant distillation
	CGBS2	Cyclohexane	400	1600	2000	80	work up / plant Distillation
		Acetone	1300	1700	3000	57	workup / CF/Plant dist. / Column distillation

Job work pending quantity from vendors more than 90 days (in MT)

Vendor	Name of the solvent	Qty	Total	Remarks
Sneha Organics	TEA	0.36 MT	0.36 MT	Long Pending

Top 5 solvents consumption & Top 5 products consumption in each solvent in May'25

SOLVENT NAME	PRODUCT NAME	STAGE	CONSUMPTION QUANTITY(L)		
			FRESH	RFS	TOTAL
	REGULAR BATCHES				
Acetone	Clopidogrel	CGBH2	45750	46200	91950
		COPB1	4760	0	4760
	Levetiracitam	LVTM2	37550	0	37550
	Rosuvastatin	RSC3B	8075	0	8075
	Total Quantity (L)		96135	46200	142335
	Fresh&Rec %		68	32	
	CAMPAIGN BATCHES				
	Chlorothalidone	CRTD2 Dry	1900	0	1900
	Total Quantity (L)		1900	0	1900
	OVERALL TOTAL QUANTITY(L)		98035	46200	144235
	OVERALL CONSUMPTION %		68	32	

SOLVENT NAME	PRODUCT NAME	STAGE	CONSUMPTION QUANTITY(L)		
			FRESH	RFS	TOTAL
	REGULAR BATCHES				
Ethyl Acetate	Clopidogrel	CGBH1	19600	33459	53059
	Pregabalin	AMHA2	0	5600	5600
		PGBN7 Crop	0	5250	5250
	Rosuvastatin	RSC2B Crude	0	6745	6745
		RVST1	64940	86380	151320
	Total Quantity (L)		84540	137434	221974
	Fresh&Rec %		38	62	
	CAMPAIGN BATCHES				
	Opicapone	OCPN5	5985	0	5985
		OCPN6	615	0	615
	Doxepin	DOXP2	2000	0	2000
	Safinamide	SFML2	4305	0	4305
	Total Quantity (L)		12905	0	12905
	OVERALL TOTAL QUANTITY(L)		97445	137434	234879
	OVERALL CONSUMPTION %		41	59	

Top 5 solvents consumption & Top 5 products consumption in each solvent in May'25

SOLVENT NAME	PRODUCT NAME	STAGE	CONSUMPTION QUANTITY (L)		
			FRESH	RFS	TOTAL
MDC	REGULAR BATCHES				
	Clopidogrel	CGBH1	0	33800	33800
		COPB1	2700	13500	16200
	Levetiracitam	LVTM2	56000	148600	204600
	Rosuvastatin	RSC2B Crude	500	0	500
		RSC3B	3840	0	3840
	Rosuvastatin	RVSC2 (M2039IH)	455	0	455
	Total Quantity (L)		63495	195900	259395
	Fresh&Rec %		24	76	
	CAMPAIGN BATCHES				
	Chlorothalidone	CRTD2 Dry	100	0	100
	Gadoteridol	GATD1	20	0	20
	Opicapone	OCPN3	400	0	400
		OCPN5	2700	0	2700
		OPCN2	400	0	400
	Romidepsin	RDPC3	4820	0	4820
		RDPS1 Dry	750	0	750
	Total Quantity (L)		9190	0	9190
	OVERALL TOTAL QUANTITY(L)		72685	195900	268585
	OVERALL CONSUMPTION %		27	73	

SOLVENT NAME	PRODUCT NAME	STAGE	CONSUMPTION QUANTITY (L)		
			FRESH	RFS	TOTAL
IPA	REGULAR BATCHES				
	Atorvastatin	ATSC1	0	25063	25063
		ATSC2	1200	0	1200
	Clopidogrel	CGBH1	20450	29681	50131
	Pregabalin	PBLN4	14300	39500	53800
	Rosuvastatin	RVST1	2200	0	2200
	Total Quantity (L)		38150	94244	132394
	Fresh&Rec %		29	71	
	CAMPAIGN BATCHES				
	Metoprolol	MPLT1	600	0	600
	Opicapone	OPDN3	60	0	60
	Sitagliptin	SATM4	12600	0	12600
	Sparsentan	SPAN1	350	0	350
	Total Quantity (L)		13610	0	13610
	OVERALL TOTAL QUANTITY(L)		51760	94244	146004
	OVERALL CONSUMPTION %		35	65	

Top 5 solvents consumption & Top 5 products consumption in each solvent in May'25

SOLVENT NAME	PRODUCT NAME	STAGE	CONSUMPTION QUANTITY(L)		
			FRESH	RFS	TOTAL
	REGULAR BATCHES				
Methanol	Atorvastatin	ATSC1	200	0	200
		ATSC2	200	0	200
		ATSC3	18900	0	18900
	Clopidogrel	CGBH1	1360	0	1360
		CGBH2	25830	0	25830
		COPB1	45280	13000	58280
		CTPS1	1300	0	1300
	Pregabalin	AMHA1	14400	12000	26400
		AMHA12C M-470	2000	0	2000
		AMHA12C S-811	1650	1070	2720
		AMHA3	20250	3900	24150
		AMHA3 2C	11000	5316	16316
		PGBN7 Crop	2995	0	2995
	Rosuvastatin	RSC2B Crude	200	0	200
		RVST1	31700	0	31700
	Rosuvastatin	RVSC2 (M2039IH)	1200	0	1200
	Total Quantity (L)		178465	35286	213751
	Fresh&Rec %		83	17	

SOLVENT NAME	PRODUCT NAME	STAGE	CONSUMPTION QUANTITY(L)		
			FRESH	RFS	TOTAL
	CAMPAIGN BATCHES				
Methanol	Chlorothalidone	CRTD2	400	0	400
	Doxepin	DOXP2	600	0	600
	Ensifentrine	ENFN1	150	0	150
	Famotidine	FMTN3	6735	0	6735
	Fezolinetant	FLNT1	229	0	229
		FZLT1	600	0	600
	Gadoteridol	GATD1	1600	0	1600
	Levetiracitam	LVTM2	1800	0	1800
	Levodopa	LDOP1	250	0	250
	Metoprolol	MPLT1	1000	0	1000
	Opicapone	OCPN3	500	0	500
		OCPN5	16600	0	16600
		OCPN6	1880	0	1880
		OPCN2	800	0	800
		OPDN3	200	0	200
	Romidepsin	RDPC3	6730	0	6730
		RDPS1	600	0	600
	Safinamide	SFML1	900	0	900
		SFML2	208	0	208
	Sparsentan	RSC2B	132	0	132
		SPAN1	520	0	520
	Total Quantity (L)		42434	0	42434
	OVERALL TOTAL QUANTITY(L)		220899	35286	256185
	OVERALL CONSUMPTION %		86	14	

SOLVENT NAME	PRODUCT NAME	STAGE	CONSUMPTION QUANTITY (L)		
			FRESH	RFS	TOTAL
	REGULAR BATCHES				
Toluene	Atorvastatin	ATSC3	4075	14675	18750
	Clopidogrel	CGBH1	0	74850	74850
		CTPS1	0	20000	20000
	Pregabalin	AMHA1	0	33600	33600
		AMHA12C	0	2500	2500
		AMHA2	100	6500	6600
		AMHA3	100	2500	2600
	Total Quantity (L)		4275	154625	158900
	Fresh&Rec %		3	97	
	CAMPAIGN BATCHES				
	Ensifentrine	ENFN1	50	0	50
	Levodopa	LDOP1	100	0	100
	Medetomidine	MEDT4	145	0	145
	Sparsentan	SPAN1	1700	0	1700
	Safinamide	SFML1	1140	0	1140
	Total Quantity (L)		3135	0	3135
	OVERALL TOTAL QUANTITY(L)		7410	154625	162035
	OVERALL CONSUMPTION %		5	95	

SRS Performance for FY 2025-26 from LifeScience-3(6 columns)

S.No.	Month	Input Qty. in KL	Output Qty. in KL	Net Value(in Cr.)
1	Avg. (2024-25)	1061	725	3
1	April-25	1316.5	910.3	4.5
2	May-25	1660.5	1104.0	5.4
3	June-25			
4	July-25			
5	Aug-25			
6	Sep-25			
7	Oct-25			
8	Nov-25			
9	Dec-25			
10	Jan-26			
11	Feb-26			
12	Mar-26			
	Total	1488.5	1007	4.9

RFS (Column Distilled) Solvent stock as on 19/06/2025

Sl#	Name of the solvent	M-Code	Volume in KL	GC
1	Methanol	S-801 D	28.6	
2	Toluene	S-804 D	32.1	
3	Acetone	S-805 D	58.50	
4	IPA	S-806 D	126.0	
5	MDC	S-807 D	45.0	
6	Acetonitrile	S-810 D	18.80	
7	Ethyl Acetate	S-811 D	44.0	
8	Cyclo Hexane	S-836 D	8.0	
9	TEA	M-440	2.2	
Total Qty. (L)			402.2	

To be distilled & To be sold Solvent stock as on 19/06/2025

S.No.	Name of the solvent	M-Code	Volume in Liters	GC
1	Methanol & Acetone+Methanol	S-801 D	35.5	
2	Toluene	S-804 D	31.0	
3	Acetone	S-805 D	115.0	
4	IPA	S-806 D	88.8	
5	MDC	S-807 D	18.9	
6	Acetonitrile	S-810 D	18.5	
7	Ethyl Acetate	S-811 D	47.0	
8	Ethanol	S-822 D	299.0	
9	N-Heptane	S-831 D	29.0	
10	MTBE	S-832 D	25.0	
11	TEA	M-440	65.6	
Total Qty. (L)			811.3	

S.No.	Name of the solvent	Volume in Liters	Reason for sale
1	Spent Mix	95.0	Mixed Solvent
2.	Spent Mix(IPA+TBA)	262.0	
Total Qty. (L)		1168.3	

THANK YOU!

MSN LS-3 TEAM

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